

## **REMARKS**

Claims 1-20 are pending in the application with Claims 14-18 withdrawn from consideration. Claims 1-13, 19 and 20 are rejected. Applicant respectfully requests favorable reconsideration for the reasons below.

### **35 U.S.C. §103**

The Office rejects claims 1-13 and 19-20 under 35 U.S.C. §103 as obvious in light of United States Patent No. 6,315,551 (“Salzsieder”). Applicant respectfully requests favorable reconsideration for the reasons below.

#### **1. The Proposed Modification**

The Office states: “Salzsieder ‘551 discloses burners having particular gas feed ducts comprising four substantially concentric ducts including an exterior and interior injection duct”.

The Office concedes that Salzsieder fails to disclose a humidifying agent, but contends that it “would have been obvious to include a humidifying agent in the injection device of Salzsieder because Salzsieder discloses mixing and dispersion of gas and fuel is achieved”.

MPEP 2143.01 provides that if a “proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)”.

Salzsieder is clearly directed to a burner for using fuel to produce flame (see, for example, col. 1, lines 55-65). In particular, Salzsieder is directed to carefully controlling the ratio of primary air mixed with the fuel to the ratio of primary air injected as axial and rotary air (see, for example, col. 2, lines 1-20). The purpose of Salzsieder’s burner structure and carefully metered burning is “enriching the air/fuel mixture more quickly in the central zone of the burner downstream from the stabilizer”. (col. 2, lines 54-56).

Applicant respectfully submits that modifying Salzsieder to include a humidifying agent, such as water, is improper because the humidifying agent would destroy or negatively affect

Salzsieder's ability to produce flame. For at least this reason, applicant respectfully requests favorable reconsideration.

## **2. The Reference Also Lacks Claimed Limitations**

Applicant respectfully submits that the claimed invention is also patentable for at least the reason that Salzsieder fails to disclose or suggest all of the claimed limitations. Salzsieder's Figures 2 and 4 are provided below for clarity.

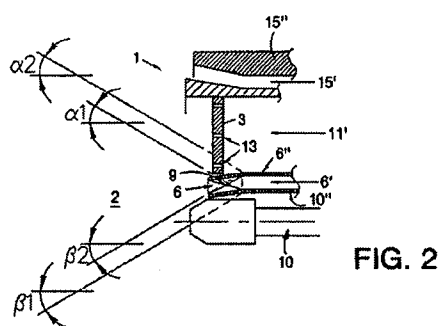


FIG. 2

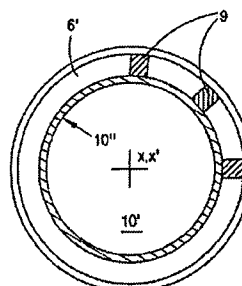


FIG. 4

By way of example, applicant's Claim 4 recites that *the interior injector is formed by a cylinder with an endplate, the endplate having a nozzle*. Applicant's endplate is a positive structure that Salzsieder fails to disclose or suggest in combination with an interior injector. In particular, Salzsieder's duct 10' lacks an endplate. For at least this reason, applicant respectfully submits that Salzsieder does not anticipate Claim 4.

Applicant also respectfully submits that there is no suggestion or motivation to modify Salzsieder's duct 10' with an endplate. As noted above, MPEP 2143.01 provides that if a "proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification."

Salzsieder's duct 10' is for feeding solid fuel, e.g. pulverized coal (col. 1, line 30) or powdered combustible waste (col. 3, lines 41-42). Applicant submits that any modification to Salzsieder's duct 10 with an endplate would create significant impedance of injected solid fuels, thereby destroying Salzsieder's purpose of solid fuel injection. For at least these reasons, applicant respectfully requests favorable reconsideration of the instant claims.

The abovementioned structural differences between Salzsieder's burner and applicant's injector are directly related to the different and distinct purposes of the two disclosures. As

noted, Salzsieder is directed to a burner, which provides flame. Fuel for the flame is fed through duct 10' and the flame is controlled through flame stabilizer 3 of duct 11'. In contrast, applicant's disclosure is directed to a chemical injector for injecting substances into a furnace or combustion zone. Applicant's *interior injector*, for example, is configured to inject agent deep into the combustion zone for the reduction of NO<sub>x</sub> (see page 9, lines 2-5 of the application as filed).

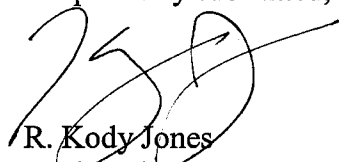
### **3. Commonly Owned Applications**

Applicant also wishes to refer the Office to copending and commonly owned United States Patent Application No. 10/742260 and the references cited therein.

### **Conclusion**

Applicant submits that by this amendment the case is placed in condition for allowance and such action is respectfully requested. If, however, any issue remains unresolved, applicant's attorney would welcome the opportunity for a telephone interview to expedite allowance and issue.

Respectfully submitted,



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